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5 Method and computer program for personalizing
 adjustable functions in a vehicle

The invention relates to a method for personalizing adjustable functions in a vehicle, in particular in a
10 motor vehicle. Furthermore, the invention relates to a computer program for carrying out this method and to a data carrier on which this computer program is stored.

Such methods are basically known from the prior art,
15 for example from German laid-open patent application DE 199 61 619 A1. In this laid-open patent application, a multiplicity of possible functions in a motor vehicle which are basically susceptible to personalization are specified. These functions include, for example, the
20 position of the mirrors and/or seats, acoustic properties of an audio system, the brightness of the dashboard lighting system or individual restrictions on the use of the vehicle by certain persons at certain times, etc. From this laid-open patent application it
25 is known that person-related settings of these functions can be stored in the form of an individual user profile so that they can be called up again at a later time.

30 However, in addition to the settings of the functions which are known from the laid-open patent application and specified above by way of example, a user profile generally also contains data, for example in the form of telephone directory lists or address lists, or in
35 the form of personal e-mails or short message system SMS messages. Both the settings and in particular the data of a user profile may be confidential; this meaning that the user does not desire that the settings and data of his personal user profile should

necessarily be made available to any other user of the vehicle.

5 Taking this prior art as a starting point, the object of the invention is therefore to develop a known method and computer program for personalizing adjustable functions in a vehicle to the extent that unauthorized access to a respectively currently activated user profile is prohibited.

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This object is achieved by means of the method claimed in patent claim 1. Accordingly, a method for personalizing adjustable functions in a vehicle, in particular in a motor vehicle, which provides for a user profile to be activated in the form of stored, person-related settings and/or data of the functions for a current user of the vehicle, is characterized by a configuration step which provides for configuration of a future access to groups of at least some of the functions of the currently activated user profile, the functions within a group being at least similar in terms of their requirement for personalization and/or confidentiality, in that the current user defines individually, for each of these groups, which other user he permits access to his person-related settings and/or data of the functions in a respective group.

With the implementation of this configuration step according to the invention, the user can himself control who, that is to say which other user, is allowed to access his person-related settings and/or data in his user profile, and who is not allowed to do so. In this context, the access is advantageously defined on a group-specific basis, that is to say is defined in a uniform way for all the functions within a group.

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The term "requirement for personalization" in the sense of the invention means the strength of the desire of a user for, for example as many as possible, personal settings.

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In contrast, the term "requirement for confidentiality" means the measure of confidentiality which the user respectively assigns to individual functions. For example, he will allocate a higher degree of confidentiality to his personal telephone lists or address lists than to his personal seat setting.

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Within the scope of the configuration step according to the invention, the conditions under which future access to the currently activated user profile is to be possible are generally defined. According to advantageous developments of the method, the invention therefore provides not only the already mentioned conditions for a future access to groups of functions but also further definitions for access operations to parts of the user profile. These further configuration possibilities may be implemented independently of one another, that is to say they may also be implemented individually but also in combination with one another and are listed in patent claim 7.

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At this point only the possibility of configuring such that the current user can reserve any desired proportion of the total available storage capacity for person-related data and/or settings for storing his user profile will be mentioned in particular at this point. This reservation within the scope of the configuration is basically comparable with expressing a desire for a specific storage capacity. However, this reservation in itself does not yet cause this desired storage capacity to be seized, in particular this reservation firstly does not yet take away any storage space from any other user. This is precisely what

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happens only in a step 3 which is also provided according to the invention but is however only provided on an optional basis and actually provides for the data and/or settings of a currently non-activated user profile to be reduced or deleted by the current user. This third method step can, according to the invention, be carried out even if as a result settings and/or data in another user profile are deleted. The advantage of this configuration possibility is that the current user does not require a password to delete parts of the user profile of the other user; this configuration possibility presumes that there is a certain degree of trust between the users.

Further advantageous refinements are the subject matter of the subclaims.

The abovementioned object is also achieved by means of a computer program with a program code and by means of a data carrier with the program code. The advantages of these solutions correspond to the advantages mentioned above with respect to the claimed method.

Appended to the description is a single figure which is a schematic illustration of the method according to the invention.

The method according to the invention is described in detail below with reference to this figure. The method according to the invention is used to personalize adjustable functions in a vehicle, in particular in a motor vehicle. These functions may relate, on the one hand, to any adjustable devices such as a seat, a seat, a mirror or the engine of the vehicle, but also e-mail systems or navigation systems or programs.

According to a starting step S0, the method according to the invention firstly provides, in a first step S1,

that the user profile of a current user of the vehicle is activated. The user profile is concerned with stored person-related settings and/or data of the aforesaid functions. The term "settings" means here, for example
5 the person-related mirror settings or seat settings which are related to the current user, the setting of the brightness of the dashboard lighting, setting of the acoustic properties in an audio system or the setting of preferred transmitters of the car radio etc.
10 In contrast, the term "data" relates to personal telephone directory lists, address lists, e-mails or SMS messages of the user.

The user profile can basically be activated in two
15 different ways. A first way is for the user profile of the current user to be activated automatically for the personalization process when a control device starts. This applies in particular if the current user is identical to a default user whose user profile is
20 activated automatically when the control device starts. Alternatively or additionally the default user profile is activated if the current user is not identical to any user profile. As an alternative to the user profile of the default user it is also possible for the user
25 profile of the current user to be activated automatically when the control device starts; this is usually the case if the current user was also the user who was activated when the control device was last operated, and the control device was configured in such
30 a way that the next time it starts it automatically activates the user who was activated last, instead of the default user.

If the current user happens not to be identical to the
35 default user or to the user who used the control device last, the user profile of the current user is activated in two stages. Here, the first stage is identical to the abovementioned starting of the control device for

the personalization process and the associated activation of the user profile for the default user or the last user. In a second subsequent stage, the current user is registered in such a form that the
5 current user has to identify himself by giving a user number which represents him, or his name. The desired activation of the user profile for the current user then takes place subsequently only if this identification is checked successfully.

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The activation of the user profile of the current user is preferably carried out in a standardized way for all the personalized operator control units in the vehicle, This means that the person-related settings and/or data
15 of the current user can preferably be accessed from all the operator control units in the vehicle, provided that these access operations are not restricted by a specific configuration such as is described further below. However, with this configuration it is important
20 that simultaneous changes to the user profile which are carried out from various operator control units in the vehicle are prohibited.

The user profile of the default user preferably remains
25 set at those operator control units of the vehicle at which the current user profile is not activated.

Within the scope of the configuration step S2 according to the invention, it is possible to define not only the
30 abovementioned conditions for a future access operation to the groups of functions of the vehicle but also conditions for further access operations to the currently activated user profile. For example, it is thus possible to define whether the access to the user
35 profile is to be possible in future only after a password, which is preferably specified during the registration, is input. If this is the case, the password can be defined or changed, if desired. Within

the scope of this configuration step S2, those users to which in future access to the currently activated user profile is to be permitted for the purpose of deleting it or for the purpose of changing the assignment of
5 available storage capacity can also be defined.

Furthermore, it is possible to define the time period during which, after the control device has been shut down for the personalization process, the user profile
10 of the user who was active last is set automatically and not the user profile of the default user, when this device restarts. It is also possible to define whether the current user is to be registered to activate his user profile by means of his name and/or by means of
15 his user number; if appropriate his name is to be preset as a reference variable within the scope of the configuration step. Furthermore, restrictions on the access rights and operator control possibilities for the currently activated user profile for selected, in
20 particular, the rear, operator control units in the vehicle can be defined. If necessary, these restrictions may be different, that is to say may be defined individually for individual users. Furthermore, the current user can reserve any desired storage
25 capacity within available 100% storage capacity for storing the person-related data and/or settings of his user profile within the scope of the configuration step S2. Finally, within the scope of the method step S2 it is also possible to define whether in future the user
30 is to be identified by means of the vehicle key and/or the user's mobile telephone when the control device starts.

A current setting of the user profile of the current
35 user such as is made available when this user profile is activated corresponds either to the original presetting which is carried out at the works or to a change to these settings which was last carried out by

the current user. The presetting of the user profile which is carried out at the works may comprise, for example, the following definitions:

- 5 It is possible to define the presettings for the functions of the individual groups and it is possible to define that these presettings are assigned to the user profile of the default user so that they are available when the user profile of the default user is
10 activated. Furthermore, it is possible to define that no password is required to access the settings of the user profile, or under which conditions a password is not required to do so; that for registration the current user does not need to be identified either by
15 means of his name or by means of his key; that the access rights and operator control possibilities for individual operator control units in the vehicle are not restricted and/or that the 100% of the storage capacity is assigned to the default user for
20 personalization purposes.

This presetting/assignment of 100% of the total available storage capacity for personalization purposes solely to the default user is acceptable only for as
25 long as no other users are provided. As soon as even just one further user wishes to participate in the described personalization concept, he of course requires a sufficient proportion of the available storage capacity to store his person-related settings
30 and/or data. It must then be possible to change the presetting which is made for the storage capacity at the works. For this purpose, the invention provides that without exception any user is given permission to reduce or even delete the data and/or settings of a
35 currently non-activated user profile. This freedom which is given to each current user provides the advantage that the current user does not need to know the password of the respective other user, whose memory

area he is intending to reduce, in order to correspondingly set up his own memory. Of course, such a procedure in the present case is possible only because sufficient trust is assumed to exist between
5 all the users of the system so that it is not to be assumed that a user will also intentionally delete data and settings of another user. Instead, it is basically assumed that when assigning the storage capacities which are respectively required for them the users will
10 agree among themselves. Nevertheless, if the storage capacity for another user is, in particular, reduced in an undesired way, a warning message is advantageously output both to the currently activated user and preferably also to the other user.

15 The method described above is advantageously implemented in the form of a computer program with suitable program code. With such a solution it is conceivable that this computer program is stored, if
20 appropriate together with other computer programs, on a computer readable data carrier. The data carrier may be a diskette, compact disc, flash memory etc. The computer program which is stored on the data carrier or the program code which is stored there can then be sold
25 as a product to a customer.

However, the computer program can also be transmitted and sold to a customer without using a data carrier over an electronic communications network, in
30 particular the Internet.